

**Oroville Facilities Relicensing Efforts
Environmental Work Group
Draft Narrative Reports for PM&E Discussion**

Resource Action: EWG-78B

Task Force Recommendation Category: 2

Habitat Protection Measure-Develop Operational/Management Protocols to Minimize Potential Impacts to Nesting Bank Swallows Related to Project Releases

Date of Field Evaluation: February 2002 through March 2004

Field Evaluation Team: Dave Bogener

Description of Potential Resource Action:

Bank swallow is a State listed Threatened species. The current DWR operational pattern is to release about 2,000 cubic feet per second (cfs) from the Oroville Project during April, May and June. On July 1, releases increase, ramping up to approximately 9,000 cfs. This increased release raises the river stage to an elevation equal to or exceeding the elevation of the lowest burrow in some bank swallow colonies. Most bank swallows fledge by July 1. However, data analyses indicate that at some colony locations, during some years, not all swallows fledge until July 15.

Stage/discharge modeling conducted under Relicensing Study Plan SP-T2 indicates that the current July operational release pattern has the potential to inundate bank swallow burrows while pre-fledged young are potentially present in the burrows (DWR 2004). The current loss of bank swallow production (if any) is unquantified.

DWR initiated informal consultation with DFG under the State Endangered Species Act based on these stage/discharge modeling results. DWR prepared a Biological Assessment under the Joint State/Federal Operations Criteria and Plan (OCAP) environmental review process. The OCAP process was selected opposed to the FERC Relicensing process for several reasons including;

- Earlier implementation date (June 2004 compared with January 2007)
- Potential operational solutions could require coordination with the Federal water project
- DFG suggestion/agreement

Initial informal consultation between DFG and DWR reached several conclusions including;

- Bank swallow losses (if any) are likely to vary from year to year and colony to colony
- Current operational release patterns may result in minor (but unquantified) level of take on an annual basis.

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- Short-term spring pulse flows designed to force bank swallows to nest higher on the eroding cutbanks are unlikely to be effective as swallows are known to excavate burrows in moist soils.
- Installation and maintenance of netting or other barriers to bank swallow burrow construction on the lower portion of cutbanks is unlikely to be successful in a dynamic river system.
- Alteration of current July project releases to minimize impacts on nesting bank swallows would have substantial impacts to water supply deliveries and the maintenance of Delta water quality.
- The greatest long-term risk to bank swallow populations on the Feather River is habitat loss related to bank protection.

During informal consultation DFG recommended a mitigation strategy designed to maintain bank swallow populations on the Feather River. This action included;

- DWR purchase conservation easements on lands containing actively eroding bank swallow habitat to provide long-term habitat protection.
- Annual June bank swallow survey of the Feather River to provide long-term population data. These data would be used by DFG to evaluate the effectiveness of the habitat protection/acquisition conservation strategy.

Nexus to Project:

Project releases for water supply, and flood management occur throughout the year. July releases are primarily for water supply purposes, including maintenance of Delta water quality standards.

Potential Environmental Benefits:

Long-term maintenance of bank swallow habitat and production on the Feather River would aid in the species recovery. Further, protection of actively eroding sites along the Feather River from bank protection activities serves to allow natural geomorphic processes to continue with potential benefits to a wide range of aquatic and terrestrial species including salmon, steelhead, VELB, and western yellow-billed cuckoo.

Existing Conditions in the Proposed Resource Action Implementation Area:

DWR (in consultation and coordination with DFG) is currently investigating conservation easements or purchase of actively eroding parcels of private lands containing existing bank swallow colonies on the Feather River below the Project Boundary. Parcels under consideration are projected to continue to actively erode over the next 20 to 30 years and to provide suitable soil characteristics for bank swallow excavation and nesting.

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Design Considerations and Evaluation:

Important design considerations are primarily related to site selection and include;

- Site of existing bank swallow colony location(s)
- Site projected to continue to erode over the next 20 to 30 years
- Site with suitable substrate for borrow and nest construction over the next 20 to 30 years
- Site where erosion can be allowed long-term without the need to protect infrastructure (highways, buildings, water conveyance systems)
- Site on the Feather River
- Site where erosion is likely to continue to produce tall vertical banks
- Site capable of meeting future CALFED ERP goals

Land acquisition and conservation easement have proven, with careful site selection, to be effective long-term habitat protection mechanisms. The effectiveness of this mitigation would be evaluated based on several criteria. These criteria are;

- Ability of the site to support nesting bank swallows over time
- Maintenance of bank swallow populations on the Feather River over time.

Synergism and Conflicts:

This OCAP mitigation measure is not directly related to any other currently developed Relicensing Resource Action. However, if Relicensing Study Plan T3/5 indicates that project operations are resulting in reduced recruitment or retention of riparian habitat this same land acquisition could be used to meet riparian mitigation requirements without modifying project operations. Further, opportunities exist to combine riparian planting on an actively eroding site as an alternative to the large woody debris (LWD) placement Resource Action. This alternative to the LWD Resource Action is acceptable in concept to the USF&WS and would avoid the liability issues associated placing LWD within the stream channel. Additionally, lands acquired along the Feather River could be converted to serve as VELB mitigation areas.

Riparian enhancement along the Feather River is an important CALFED ERP goal and may offer opportunities for a larger enhancement area and funding partnerships.

Uncertainties:

As OCAP consultation on this issue is ongoing, it is currently unclear how much bank swallow habitat protection DFG estimates would be required for full mitigation.

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Cost Estimate:

Cost estimates provided by Nature Conservancy and River Partners indicate that acquisition of riverfront orchard lands vary between \$5,000 per acre and \$8,000 per acre. Conservation easement can be significantly less expensive than acquisition depending on the conditions in the easement. For example, conservation easements structured to allow the farmer to continue farming at his own risk while allowing bank erosion are occasionally negotiated at about one-half the purchase price.

Adequate land area to cover potential erosion over the next 20 to 30 years for two actively eroding bank swallow colony locations could equal 100 acres at some Feather River locations. Land acquisition costs related to this OCAP mitigation measure based on acquisition of 100 acres, are estimated in the range of \$500,000 to \$800,000. It may be possible to acquire a conservation easement for the same area at approximately one-half of these costs.

Recommendations:

DWR should continue to consult with DFG to design a mitigation strategy for impacts identified under the OCAP BA. DWR should provide regular updates on the OCAP consultation to EWG Relicensing stakeholders. DWR should carefully evaluate opportunities associated with any land acquisition or easement for potential Relicensing or CALFED ERP benefits.